

CONCENTRATOR DEVELOPMENT

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During the six years of technology development by the Parabolic Dish program, the problems peculiar to tracking dishes have been explored in depth with particular emphasis on economics. Starting with the Precursor Concentrator, testing techniques and apparatus such as calorimeters and the flux mapper were developed. At the same time, mirrors were developed to have a long operating life as well as high performance. Commercially available equipment was evaluated as well. Building on all these elements, the Test Bed Concentrators were designed and built. With a peak intensity in the focal plane of over 17,500 suns and an average concentrator ratio over 3,000 on an eight inch diameter aperture, they have proven to be the work horses of the technology. With a readily adjustable mirror array, they have proved to be an essential tool in the development of dish components, receivers, heat transport systems, instrumentation, controls, engines, and materials, all necessary to cost effective modules and plants. Utilizing the lessons learned from this technology, more cost effective systems were designed. These included Parabolic Dish Number 1 (PDC-1) and PDC-2 currently in final design by Acurex Corporation. Even more advanced concepts are being worked on, such as the Cassegrainian systems by BDM Corporation.